

Amendments to the Claims

1. (currently amended) A rechargeable battery ~~secondary cell~~ charging apparatus which comprises;

a charger, which is either built into a personal computer or connected directly or indirectly thereto, whereby an internal power supply source of said personal computer is used as a power supply for said charger in a charging operation for said rechargeable battery ~~secondary cell~~, and wherein said charger having built into it a charging processing operation program required for charging of said rechargeable battery ~~secondary cell~~ wherein ~~whereby~~ a charging operation is performed by executing said charging processing operation program selected for said rechargeable battery ~~secondary cell~~ to be charged with utilizing an electric power supplied from said internal power supply source of said personal computer;

a battery holding apparatus which holds at least single rechargeable battery ~~a secondary cell~~ to be charged and connected directly or indirectly to said charger;

a display means connected to said personal computer and displaying at least one information selected from a group consisting information related to a rechargeable ~~secondary~~ battery to be charged, information related to conditions required for charging said rechargeable battery ~~secondary cell~~ to be charged and information related to past and current charging situation or results of said charging operation; ~~and~~

an input means connected to said personal computer and for inputting information at least about said respective rechargeable battery ~~secondary cell~~ to be charged necessary to execute said charging processing operation program into a controller provided in personal computer; and

further wherein said charger is connected detachably to any one of output terminals of said internal power supply circuit of said personal computer, and is further connected either directly or indirectly, by an appropriate connector and/or cable to said battery holding apparatus.

2. (canceled)

3. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim 2~~ claim 1, wherein said personal computer is selected from a group of a general-purpose personal computer including a desktop personal computer, a laptop personal computer, a mobile type personal computer, a dedicated game-use personal computer, and a TV personal computer with a bi-directional communication capability.

4. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim 2~~ claim 1, wherein said charger is either a charging processing operation program required for a charging operation on a rechargeable battery secondary cell or is an apparatus into which a charging processing operation program required for a charging operation to a rechargeable battery secondary cell is built.

5. (canceled)

6. (canceled)

7. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim 2~~ claim 1, wherein said personal computer is provided with a driving controlling program for driving a charging controlling program installed in said charger.

8. (currently amended) A rechargeable battery secondary cell charging apparatus according to claim 1, wherein said apparatus configured so that by operating a controlling-condition-inputting means consisting of either a key-board or a mouse of a personal computer, at least one of information

selected from a group of charging processing information, charging processing condition, information of a battery to be charged, situation of charging process proceeding, charging history or the like is selected so as to make a control based upon the selected information and the result thereof being displayed on said display means of said personal computer.

9. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim-8~~ claim 1, wherein said charging processing operation program is made separately based upon kinds of batteries, models thereof or applications thereof, respectively.

10. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim-2~~ claim 1, wherein an apparatus that forms the charger which is selected from a group consisting of an international PCI (personal computer interface) standard selecting from either one of a PCI board or PCI card each including said charging processing operation program therein, an IC chip mounted on an expansion board or the like, a CD-ROM, a floppy disk, an IC card each including said charging processing operation program therein and a personal computer hard disk (HD) onto which said charging processing operation program has been installed.

11. (canceled)

12. (currently amended) A rechargeable battery secondary-cell charging apparatus according to ~~claim-2~~ claim 1, wherein said charger is connected to said power supply circuit of said personal computer through an internationally standardized interface such as a PCI or a USB of said personal computer.

13. (currently amended) A rechargeable battery secondary-cell charging apparatus according to ~~claim-6~~ claim 1, wherein said battery holding apparatus is connected to said charger provided with a chip into which said charging processing operation program being installed therein and

mounted on a board which is inserted into a board insertion slit of said personal computer, through an appropriate connector and/or cable.

14. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to ~~claim 13~~ claim 1, wherein in a case in which said charger is provided within said personal computer, said charger is connected to said internal power supply circuit of said personal computer, and is connected to said battery holding apparatus either directly via a signal output of said personal computer, or indirectly connected thereto, via a signal output of said personal computer, utilizing an appropriate connector and/or cable.

15. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to ~~claim 13~~ claim 1, wherein in a case in which said charger is provided outside of said personal computer, said charger is connected to said internal power supply circuit of said personal computer through said board inserted into said board insertion slit or through said USB connector provided with said personal computer.

16. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to ~~claim 12~~ claim 10, wherein said international PCI (personal computer interface) standard selecting from either one of a PCI board or PCI card, each including said charging processing operation program therein, an IC chip mounted on an expansion board or the like, a CD-ROM, a floppy disk, an IC card each including said charging processing operation program therein or a personal computer hard disk (HD) onto which said charging processing operation program has been installed, is individually produced based upon kinds of batteries, model thereof, applications therefor, or the like, respectively.

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (currently amended) A rechargeable battery
secondary cell charging apparatus which comprises;

_____ a charger, which is either built into a personal computer or connected directly or indirectly thereto, whereby an internal power supply source of said personal computer is used as a power supply for said charger in a charging operation for said rechargeable battery-secondary cell, and wherein said charger having built into it a charging processing operation program required for charging of said rechargeable battery secondary cell wherein a charging operation is performed by executing said charging processing operation program selected for said rechargeable battery secondary cell to be charged with utilizing an electric power supplied from said internal power supply source of said personal computer;

_____ a battery holding apparatus which holds at least single rechargeable battery secondary cell-to be charged and connected directly or indirectly to said charger;

_____ a display means connected to said personal computer and displaying at least one information selected from a group consisting information related to a rechargeable battery-secondary cell to be charged, information related to conditions required for charging said rechargeable battery secondary cell to be charged and information related to past and current charging situation or results of said charging operation;

_____ an input means connected to said personal computer and for inputting information at least about said respective rechargeable battery secondary cell-to be charged necessary to execute said charging processing operation program into a

controller provided in personal computer; and further wherein
said rechargeable battery ~~secondary-cell~~ charging processing
operation program executes high-speed charging processing.

22. (currently amended) A rechargeable battery
~~secondary-cell~~ charging apparatus according claim 21, wherein
said rechargeable battery ~~secondary-cell~~ charging processing
operation program executes charging with a charging current of
at least 2C.

23. (currently amended) A rechargeable battery
~~secondary-cell~~ charging apparatus according to claim 10,
wherein said charging processing operation program included in
said charger is either built into said personal computer by
inserting a floppy disk, a CD-ROM, or an IC card containing
said charging processing operation program into a prescribed
location of said personal computer, or by inserting a PCI
board onto which an IC chip containing said charging
processing operation program has been mounted into an
expansion slot of said personal computer.

24. (currently amended) A rechargeable battery
~~secondary-cell~~ charging apparatus according to ~~claim 1 or~~
~~claim 23~~ claim 21, wherein each one of a plurality of said
charging processing operation programs is created so as to
have a respective charging process operation condition of a
rechargeable battery ~~secondary-cell~~ to be subjected to
charging processing, being different from each other based
upon at least one factor among a rechargeable battery
~~secondary-cell~~ manufacturer name, rechargeable battery
~~secondary-cell~~ type, model, construction, quantity, battery
capacity, and internal resistance and the like .

25. (currently amended) A rechargeable battery
~~secondary-cell~~ charging apparatus according to claim 24,
wherein said charging processing operation program has a
function to distinguish at least one information selected from
a group of information consisting a manufacturer name,

rechargeable battery ~~secondary cell~~ type, model, construction, quantity, battery capacity, and internal resistance and the like of a rechargeable battery ~~secondary cell~~ requiring charging processing inserted in said battery holding apparatus.

26. (currently amended) A rechargeable battery ~~secondary cell~~ charging apparatus which comprises;

a charger, which is either built into a personal computer or connected directly or indirectly thereto, whereby an internal power supply source of said personal computer is used as a power supply for said charger in a charging operation for said rechargeable battery ~~secondary cell~~, and wherein said charger having built into it a charging processing operation program required for charging of said rechargeable battery ~~secondary cell~~ wherein a charging operation is performed by executing said charging processing operation program selected for said rechargeable battery ~~secondary cell~~ to be charged with utilizing an electric power supplied from said internal power supply source of said personal computer;

a battery holding apparatus which holds at least single rechargeable battery ~~secondary cell~~ to be charged and connected directly or indirectly to said charger;

a display means connected to said personal computer and displaying at least one information selected from a group consisting information related to a rechargeable battery ~~secondary cell~~ to be charged, information related to conditions required for charging said rechargeable battery ~~secondary cell~~ to be charged and information related to past and current charging situation or results of said charging operation;

an input means connected to said personal computer and for inputting information at least about said respective rechargeable battery ~~secondary cell~~ to be charged necessary to

execute said charging processing operation program into a controller provided in personal computer; and

further wherein said charger automatically selects a charging processing operation program having the most suitable charging processing condition to said rechargeable battery ~~secondary-cell~~ battery to be charged, among a plurality of charging processing operation programs stored in said charger utilizing information about the rechargeable battery ~~secondary-cell~~ battery to be charged and distinguished by said personal computer, its-self or separate information about the rechargeable battery ~~secondary-cell~~ to be charged which is input into said personal computer by a user utilizing said inputting means.

27. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to any one of ~~claims 1, 21 and~~ 26 wherein information regarding a rechargeable battery ~~secondary-cell~~ requiring charging processing and inserted into said battery holding apparatus is displayed on a display means of said personal computer.

28. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to ~~claim 24~~ claim 27, wherein a user uses an appropriate input means associated with said personal computer to input information regarding a rechargeable battery ~~secondary-cell~~ requiring charging processing inserted in said battery holding apparatus, said information being displayed on a display means of said personal computer.

29. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to ~~claim 26~~ claim 28, wherein when a user uses an appropriate input means associated with said personal computer to input information regarding a rechargeable battery ~~secondary-cell~~ requiring charging processing inserted in said battery holding apparatus and display said information on said display means of said

personal computer in a case in which at least one information being different from information regarding a rechargeable battery secondary cell requiring charging processing inserted in said battery holding apparatus is input, an alarm means is driven.

30. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim 24~~ claim 28, wherein a user, based on information regarding a rechargeable battery secondary cell requiring charging processing, sets various conditions necessary to be required for charging said rechargeable battery secondary cell by selecting same from a large number of alternatives displayed on a display screen of said personal computer.

31. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim 24~~ claim 1, wherein a predicted charging characteristics graph with regard to charging operation conditions for said selected rechargeable battery secondary cell requiring charging processing can be displayed on said display means of said personal computer.

32. (currently amended) A rechargeable battery secondary cell charging apparatus according to claim 31, wherein said predicted charging characteristics graph indicates a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

33. (currently amended) A rechargeable battery secondary cell charging apparatus according to ~~claim 24~~ claim 27, wherein a display means of said personal computer displays at least one information selected from a manufacturer name, a battery type, battery capacity, charging rate, and internal resistance and the like with regard to charging operation conditions for said selected rechargeable battery secondary cell requiring charging processing, and displays information

in that whether it distinguishes the start of charging or charging in progress.

34. (currently amended) A rechargeable battery secondary-cell charging apparatus which comprises;

a charger, which is either built into a personal computer or connected directly or indirectly thereto, whereby an internal power supply source of said personal computer is used as a power supply for said charger in a charging operation for said rechargeable battery-secondary-cell, and wherein said charger having built into it a charging processing operation program required for charging of said rechargeable battery secondary-cell wherein a charging operation is performed by executing said charging processing operation program selected for said rechargeable battery secondary-cell to be charged with utilizing an electric power supplied from said internal power supply source of said personal computer;

a battery holding apparatus which holds at least single rechargeable battery secondary-cell to be charged and connected directly or indirectly to said charger;

a display means connected to said personal computer and displaying at least one information selected from a group consisting information related to a rechargeable battery secondary-cell to be charged, information related to conditions required for charging said rechargeable battery secondary-cell to be charged and information related to past and current charging situation or results of said charging operation;

an input means connected to said personal computer and for inputting information at least about said respective rechargeable battery secondary-cell to be charged necessary to execute said charging processing operation program into a controller provided in personal computer; and

further wherein, said display means of said personal computer displays at least one information selected from a

manufacturer name, a battery type, battery capacity, charging rate, and internal resistance and the like with regard to charging operation conditions for said selected rechargeable battery secondary-cell requiring charging processing, and separately displays either one of the start of charging or charging in progress and wherein said display means displays either a separate display of a battery voltage and battery temperature, which vary with the elapse of processing time, or a graph indicating a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

35. (currently amended) A rechargeable battery secondary-cell charging apparatus according to claim 34, wherein a notification means is provided which, after a start of a prescribed charging processing operation under selected charging conditions with respect to a selected rechargeable battery secondary-cell requiring charging processing, in a case in which said charging operation is completed, makes notification to a user of said completion.

36. (currently amended) A rechargeable battery secondary-cell charging apparatus according to ~~claim 35~~ claim 34, wherein said charging processing operation program has separate settings of charging processing conditions for all rechargeable battery secondary-cell currently existing to be subjected to charging processing, respectively.

37. (currently amended) A rechargeable battery secondary-cell charging apparatus according to claim 36, wherein said charging processing operation program is created that is suitable for charging processing of a new rechargeable battery secondary-cell each time a new rechargeable battery secondary-cell is marketed, said program being added to an existing charging processing operation program by updating processing.

38. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to ~~claim 37~~ claim 34, wherein any one of a PCI board or PCI card each forming said PCI interface, a floppy disk, a CD-ROM, or an IC card each of which containing said updated charging processing operation program is distributed to a user for a fee or free-of-charge, said user updating said charging processing operation program in his or her personal computer with said new charging processing operation program.

39. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to claim 37, wherein said updated charging processing operation program is distributed to a user via a communication system including such as the Internet.

40. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to claim 39, wherein after a user, by means of a pre-established method, made a payment for said charging processing operation program for updating, said user downloads said charging processing operation program via the Internet, and updates said charging processing operation program in his or her personal computer with said new charging processing operation program.

41. (canceled)

42. (currently amended) A charging system comprising:
a personal computer comprising an internal power supply circuit;

a charger using said internal power supply circuit of said personal computer as a power supply for said charger in a charging operation and which is provided with a built-in charging processing operation program suitable for performing a charging operation for charging a respective rechargeable battery ~~secondary-cell~~ to be charged;

a display means connected to said personal computer and displaying at least one information selected from a group

consisting information related to a rechargeable battery
secondary cell to be charged, information related to
conditions required for charging said rechargeable battery
secondary cell to be charged and information related to past
and current charging situation or results of said charging
operation;

a controller for causing said personal computer to drive;

a battery holding apparatus which holds at least single
rechargeable battery secondary cell to be charged and
connected to said charger;

an input means connected to said personal computer and
for inputting information at least about said respective
rechargeable battery secondary cell to be charged necessary to
execute said charging processing operation program into said
controller of said personal computer;

and an external power supply means for driving said
personal computer, and wherein said system further comprising
a battery holding apparatus connected directly or indirectly
to said charger, said battery holding apparatus includes
either a holder part configured so as to enable acceptance and
a charging processing operation separately on one or a
plurality of rechargeable battery secondary cell of various
sizes requiring charging processing, or a stand part
configured so as to enable acceptance and a charging
processing operation of a plurality of rechargeable battery
secondary cell to be charged of the same size packaged within
a prescribed pack, or directly of a cellular telephone with
said pack built thereinto.

43. (currently amended) A charging system according to
claim 42, wherein a charging processing operation program
either built into said personal computer or stored in said
charger externally connected to personal computer performs
high-speed charging processing.

44. (currently amended) A charging system according to claim 43, wherein said rechargeable battery secondary cell charging processing operation program executes charging with a charging current of at least 2C.

45. (currently amended) A charging system according to any one of ~~claim 42 to 44~~ claim 43, wherein said charging processing operation program is built into said personal computer by inserting a floppy disk, a CD-ROM, or an IC card each containing said charging processing operation program therein, into a prescribed location of said personal computer, or by inserting a PCI board onto which an IC chip or PCI card each containing said charging processing operation program has been mounted into an expansion slot of said personal computer.

46. (currently amended) A charging system according to claim 45, wherein said charger is connected detachably to any one of output terminals of said internal power supply circuit of said personal computer, and is further connected either directly or indirectly, by an appropriate connector and/or cable to said battery holding apparatus.

47. (currently amended) A charging system according to claim 46, wherein said charger is connected to said power supply circuit of said personal computer through an internationally standardized interface such as a PCI or a USB of said personal computer.

48. (currently amended) A charging system according to claim 45, wherein each of said charging processing operation program has mutually different charging processing conditions from each other as set for at least one factor among a rechargeable battery secondary cell manufacturer name, rechargeable battery secondary cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a rechargeable battery secondary cell to be subjected to charging processing.

49. (currently amended) A charging system according to claim 48, wherein said charging processing operation program has a function to distinguish at least one information selected from a group of information consisting of a manufacturer name, rechargeable battery secondary-cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a rechargeable battery secondary cell requiring charging processing inserted in said battery holding apparatus, and further wherein said program having a function in that said distinguished information about said rechargeable battery secondary-cell battery is displayed on said display means.

50. (currently amended) A charging system according to claim 49, wherein said input means is used to display on said display means information regarding a rechargeable battery secondary-cell requiring charging processing inserted into said battery holding apparatus.

51. (currently amended) A charging system according to claim 50, wherein a user, based on information regarding a rechargeable battery secondary-cell requiring charging processing, sets various conditions necessary to be required for charging said rechargeable battery secondary-cell by selecting same from a large number of alternatives displayed on a display screen of said personal computer.

52. (currently amended) A charging system according to claim 51, wherein, from information regarding said rechargeable battery secondary-cell requiring charging processing recognized by said personal computer, or from information regarding said rechargeable battery secondary-cell requiring charging processing input by a user via said input means, a charging processing operation program having charging processing conditions most suited for said rechargeable battery secondary-cell required charging processing is selected from a plurality of charging processing operation programs stored within said charger.

53. (currently amended) A charging system according to ~~claim 49~~ claim 52, wherein either various information regarding optimum charging operation conditions for a selected rechargeable battery ~~secondary cell~~ requiring charging processing or a predicted charging characteristics graph with regard to charging operation conditions for said selected rechargeable battery ~~secondary cell~~ requiring charging processing can be displayed on said display means of said personal computer.

54. (original) A charging system according to claim 53, wherein said predicted charging characteristics graph indicates a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

55. (currently amended) A charging system according to claim 54, wherein a display means of said personal computer displays a battery type, battery capacity, charging rate, and internal resistance and the like with regard to charging operation conditions for said selected rechargeable battery ~~secondary cell~~ requiring charging processing, and displays whether it distinguishes the start of charging or charging in progress, and further displays during said charging operation on said rechargeable battery ~~secondary cell~~ either a separate display of a battery voltage and battery temperature, which vary with the elapse of processing time, or a graph indicating a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

56. (currently amended) A charging system according to claim 55, wherein a notification means is provided which, after a start of a prescribed charging processing operation under selected charging conditions with respect to a selected rechargeable battery ~~secondary cell~~ requiring charging processing, in a case in which said charging operation is completed, makes notification to a user of said completion.

57. (currently amended) A charging system according to claim 56, wherein said charging processing operation program has a separate settings of charging processing conditions for all rechargeable battery secondary-cell currently existing to be subjected to charging processing, respectively.

58. (currently amended) A charging system according to claim 57, wherein said charging processing operation program is created that is suitable for charging processing of a new rechargeable battery secondary-cell each time a new rechargeable battery secondary-cell is marketed, said program being added to an existing charging processing operation program by updating processing.

59. (currently amended) A charging system according to claim 58, wherein any one of a PCI board or PCI card each forming said PCI interface, a floppy disk, a CD-ROM, or an IC card each of which containing said updated charging processing operation program is distributed to a user for a fee or free-of-charge, said user updating said charging processing operation program in his or her personal computer with said new charging processing operation program.

60. (currently amended) A charging system according to ~~claim 58~~ claim 59, wherein said updated charging processing operation program is distributed to a user via a communication system such as the Internet.

61. (previously presented) A charging system according claim 60, wherein after a user, by means of a pre-established method, made a payment for said charging processing operation program for updating, said user downloads said charging processing operation program via the Internet, and updates said charging processing operation program in his or her personal computer with said new charging processing operation program.

62. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method wherein a charger to which is

connected either a holder part configured so as to enable acceptance and a charging processing operation separately on one or a plurality of rechargeable battery secondary-cells of various sizes requiring charging processing, or a stand part configured so as to enable acceptance and a charging processing operation of a cell package in that a plurality of rechargeable battery secondary-cell of the same size packaged within a prescribed pack, or directly of a cellular telephone with said pack built thereinto, is either built into a personal computer or connected externally thereto, wherein an internal power supply circuit of the personal computer is used as a power supply for said charger in a charging operation, and wherein said charger connected to said internal power supply circuit of said personal computer having built into it a charging processing operation program required for charging of said rechargeable battery secondary-cell-wherein a charging operation is performed by executing said charging processing operation program selected for said rechargeable battery secondary-cell to be charged with utilizing an electric power supplied from said internal power supply circuit of said personal computer, while displaying at least either one of information related to said rechargeable battery secondary cell to be charged or information related to said charging condition of said charging operation as being carried out on a display means connected to said personal computer, and further wherein said charger connected to said internal power supply circuit of said personal computer is connected to a signal output terminal of said personal computer or is connected to said signal output terminal being either directly or indirectly, via an appropriate connector and/or cable, so that a charging processing operation on a rechargeable battery secondary-cell is performed, and further wherein either the rechargeable battery secondary-cell-holder part or stand part is formed so as to match the dimensions or shape of each individual rechargeable battery-secondary-cell.

63. (canceled)

64. (canceled)

65. (canceled)

66. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to ~~claim 65~~ claim 62, wherein said charger performs control of current from an internal power supply circuit of said personal computer in accordance with said charging processing operation program, so as to execute charging processing with respect to a rechargeable battery ~~secondary-cell~~ requiring charging processing.

67. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to ~~claim 66~~ claim 62, wherein said rechargeable battery ~~secondary-cell~~ charging processing operation program executes high-speed charging processing.

68. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 67, wherein said high-speed charging processing is executed with a charging current of at least 2C.

69. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to ~~claim 6~~ claim 62, wherein said charging processing operation program included in said charger is either built into said personal computer by inserting a floppy disk, a CD-ROM, or an IC card containing said charging processing operation program into a prescribed location of said personal computer, or by inserting a PCI board or expansion board including an IC chip and PCI card therein each of which containing said charging processing operation program therein has been mounted into an expansion slot of said personal computer.

70. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to ~~claim 53~~ claim 69, wherein said charging processing operation program has mutually different charging processing conditions from each

other as set for at least one factor among a rechargeable battery secondary-cell manufacturer name, rechargeable battery secondary-cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a rechargeable battery secondary-cell to be subjected to charging processing.

71. (currently amended) A rechargeable battery secondary-cell charging method according to claim 70, wherein said charging processing operation program distinguishes at least one part of a manufacturer name, rechargeable battery secondary-cell type, model, construction, quantity, battery capacity, and internal resistance and the like of a rechargeable battery secondary-cell requiring charging processing and also displays said information on a display means of said personal computer.

72. (currently amended) A rechargeable battery secondary-cell charging method according to claim 71, wherein user uses an appropriate input means associated with said personal computer to input information regarding a rechargeable battery secondary-cell requiring charging processing and inserted in said holder part or said stand, said information being displayed on a display means of said personal computer.

73. (currently amended) A rechargeable battery secondary-cell charging method according to claim 72, wherein a user, based on information regarding a rechargeable battery secondary-cell requiring charging processing sets various conditions necessary to be required for charging said rechargeable battery secondary-cell by selecting same from a large number of alternatives displayed on a display screen of said personal computer.

74. (currently amended) A rechargeable battery secondary-cell charging method according to ~~claim 70~~ claim 71, wherein in said personal computer, from information regarding said rechargeable battery secondary-cell requiring charging

processing recognized by said personal computer, or from information regarding said rechargeable battery ~~secondary-cell~~ requiring charging processing input by a user via said input means, a charging processing operation program having charging processing conditions most suited for said rechargeable battery ~~secondary-cell~~ required charging processing is selected from a plurality of charging processing operation programs stored within said charger, and displayed on said display means.

75. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 74, wherein a predicted charging characteristics graph with regard to charging operation conditions for said selected rechargeable battery ~~secondary-cell~~ requiring charging processing is displayed on said display means of said personal computer.

76. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 75, wherein said predicted charging characteristics graph indicates a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

77. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 76, wherein a display means of said personal computer displays at least one of a name of a battery manufacturer, a kind of battery, a battery type, battery capacity, quantity thereof, a capacitance thereof, charging rate, a charging power supply and internal resistance and the like with regard to charging operation conditions for said selected rechargeable battery ~~secondary-cell~~ requiring charging processing, and a display that distinguishes between the start of charging and charging in progress, and further displays during said charging operation on said rechargeable battery ~~secondary-cell~~ either a separate display of a battery voltage and battery temperature,

which vary with the elapse of processing time, or displays a graph indicating a relationship between a battery voltage and a charging time or a relationship between a battery temperature and a charging time.

78. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 77, wherein a notification means is provided which, after a start of a prescribed charging processing operation under selected charging conditions with respect to a selected rechargeable battery ~~secondary-cell~~ requiring charging processing, in a case in which said charging operation is completed, makes notification to a user of said completion.

79. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 78, wherein said charging processing operation program has a separate settings of charging processing conditions for all rechargeable battery ~~secondary-cell~~ currently existing to be subjected to charging processing, respectively.

80. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 79, wherein said charging processing operation program is created that is suitable for charging processing of a new rechargeable battery ~~secondary-cell~~ each time a new rechargeable battery ~~secondary-cell~~ is marketed, said program being added to an existing charging processing operation program by updating processing.

81. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 80, wherein any one of a PCI board or PCI card each forming said PCI interface, a floppy disk, a CD-ROM, or an IC card each of which containing said updated charging processing operation program is distributed to a user for a fee or free-of-charge, said user updating said charging processing operation program in his or her personal computer with said new charging processing operation program.

82. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to ~~claim 80~~ claim 81, wherein said updated charging processing operation program is distributed to a user via a communication system such as the Internet.

83. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 82, wherein after a user, by means of a pre-established method, makes a payment for said charging processing operation program for updating, said user downloads said charging processing operation program via the Internet, and updates said charging processing operation program in his or her personal computer with said new charging processing operation program.

84. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 83, wherein past charging processing information with respect to each individual rechargeable battery ~~secondary-cell~~ is stored as historical information.

85. (currently amended) A rechargeable battery ~~secondary-cell~~ charging method according to claim 84, wherein a storage means is provided for each individual rechargeable battery ~~secondary-cell~~, and wherein past charging processing information for each individual rechargeable battery ~~secondary-cell~~ is stored in said storage means as historical information.

86. (currently amended) A method for charging a rechargeable battery ~~secondary-cell~~ in a charging system comprising a personal computer with an internal power supply circuit, a charger including a charging processing operation program using said internal power supply circuit of said personal computer as a power supply in performing a charging operation, a display means connected to said personal computer, an input means connected to said personal computer, a controller for causing said personal computer including said charger, to drive, an external power supply means for driving

said personal computer, and a battery holding apparatus connected to said charger for holding a rechargeable battery secondary cell, said rechargeable battery secondary cell charging method comprising:

a battery list generation step of analyzing at least one of a name of battery manufacturer, a kind of a battery, a battery type, model, ratings, capacity, output voltage, charging/discharging characteristics, and internal resistance and the like of all currently existing chargeable rechargeable battery secondary cells, establishing optimum charging processing operation conditions for each said individual rechargeable battery secondary cell, and generating a list thereof;

a step of storing said battery list into a prescribed storage means of said personal computer;

a step of starting software, including said selected charging processing operation program;

a step of inserting a rechargeable battery secondary cell requiring charging processing into a holding means of said battery;

a step of said charging processing operation program distinguishing information with regard to said rechargeable battery secondary cell requiring a charging operation inserted in said charger, selecting from said battery list a charging processing operation program suitable for a charging operation of said rechargeable battery secondary cell, and of displaying said selected charging processing operation program on said display means, together with a charging graph or other battery information;

a step of inputting a number of rechargeable battery secondary cells to be charged simultaneously;

a step of verifying charging conditions on a screen of said display means, and then starting a charging operation;

a step during a charging processing operation of either causing drive of an alarm means, which makes notification that a charging processing operation is in progress, or causing a dynamic display of a charging graph on said display means; and

a step, in a case in which said charging processing operation on said rechargeable battery secondary cell is completed, of performing a display indicating that said charging processing operation has been completed.

87. (currently amended) A method for charging a rechargeable battery secondary cell in a charging system comprising a personal computer with an internal power supply circuit, a charger, including a charging processing operation program using said internal power supply circuit of said personal computer as a power supply in performing a charging operation, a display means connected to said personal computer, an input means connected to said personal computer, a controller for causing said personal computer to drive, an external power supply means for driving said personal computer, and a battery holding apparatus connected to said charger for holding a rechargeable battery secondary cell, said rechargeable battery secondary cell charging method comprising:

a battery list generation step of analyzing at least a part of a battery manufacturer, a battery type, model, ratings, capacity, output voltage, charging/discharging characteristics, and internal resistance and the like of all currently existing chargeable rechargeable battery secondary cells, respectively, establishing optimum charging processing operation conditions for each individual rechargeable battery secondary cell, respectively, and generating a list thereof;

a step of storing said battery list into a prescribed storage means of said personal computer;

a step of starting software, including said selected charging processing operation program;

a step of inserting a rechargeable battery secondary cell requiring charging processing into said holding apparatus connected to said charger;

a step of, in accordance with information with regard to a rechargeable battery secondary cell requiring charging processing, selecting a charging processing operation program suitable for a rechargeable battery secondary cell requiring a charging processing operation from said battery list;

a step of displaying a charging graph;

a step of inputting a number of rechargeable battery secondary cells to be charged simultaneously;

a step of verifying charging conditions on a screen of the display means, and then starting a charging operation;

a step during a charging processing operation of either causing drive of an alarm means, which makes notification that a charging processing operation is in progress, or causing a dynamic display of a charging graph on said display means; and

a step in a case in which said charging processing operation on said rechargeable battery secondary cell is completed of performing a display indicating that said charging processing operation has been completed.

88. (currently amended) A rechargeable battery secondary cell charging method in a charging system comprising a personal computer with an internal power supply circuit, a charger, including a charging processing operation program using said internal power supply circuit of said personal computer as a power supply in performing a charging operation, a display means connected to said personal computer, an input means connected to said personal computer, a controller for causing said personal computer to drive, and an external power supply means for driving said personal computer, said rechargeable battery secondary cell charging method comprising:

a battery list generation step of analyzing at least one of a battery manufacturer name, battery type, model, ratings, capacity, output voltage, charging/discharging characteristics, and internal resistance and the like of each one of all currently existing chargeable rechargeable ~~batterysecondary cells~~, establishing optimum charging processing operation conditions for each individual rechargeable ~~batterysecondary cell~~, respectively, and generating a list thereof;

a step of storing said battery list into a prescribed storage means of said personal computer;

a step of starting software, including said selected charging processing operation program;

a step of inserting a rechargeable battery secondary cell requiring charging processing into said a holding apparatus of said charger;

a step of a user using said input means to input separately to said personal computer at least a part of a battery manufacturer name, battery type, battery voltage, battery capacity, charging rate, and internal resistance and the like for a rechargeable battery secondary cell requiring charging processing;

a step of said personal computer selecting from said battery list, based on said input information, a charging processing operation program suitable for said rechargeable battery secondary cell requiring a charging processing operation;

a step of displaying a charging graph;

a step of inputting a number of rechargeable battery secondary cells to be charged simultaneously;

a step of verifying charging conditions on a screen of said display means, and then starting a charging operation;

a step during a charging processing operation of either causing drive of an alarm means, which makes notification that a charging processing operation is in progress, or causing a dynamic display of a charging graph on said display means; and

a step in a case in which said charging processing operation on said rechargeable battery ~~secondary cell~~ is completed of performing a display indicating that said charging processing operation has been completed.

89. (currently amended) A charging method according to ~~claim 88~~ claim 85, wherein a provider of said charging processing operation program discloses optimum charging processing conditions or a charging processing operation program for a prescribed rechargeable battery ~~secondary cell~~ on a web page via the Internet, so that any user can access said provider of said charging processing operation program and receive distribution of said charging processing operation program via said Internet.

90. (currently amended) A method for charging according to ~~claim 88~~ claim 85, wherein a provider of said charging processing operation program discloses optimum charging processing conditions or a charging processing operation program for a prescribed rechargeable battery ~~secondary cell~~ on a web page via the Internet, and wherein a user executes placement of an order and remittance of payment therefor via said Internet, whereupon a floppy disk, CD-ROM, IC card, or expansion board onto which is installed an IC chip containing said charging processing operation program required for execution thereof is sent to said user.

91. (currently amended) A charging method according to ~~claim 88~~ claim 85, wherein a provider of said charging processing operation program discloses optimum charging processing conditions or a charging processing operation program for a prescribed rechargeable battery ~~secondary cell~~ on a web page via the Internet that is at all times the latest optimum charging processing conditions or the latest charging

processing operation program, so that a user can execute placement of an order and remittance of payment therefor via the Internet, enabling said user to download said latest charging processing conditions or said latest charging processing operation program to his or her personal computer, thereby maintaining a latest charging processing operation environment on his or her personal computer.

92. (currently amended) A storage medium onto which is stored a program for the purpose of causing a computer to execute a charging method recited in claim 86.

93. (currently amended) A rechargeable battery secondary-cell charging apparatus, wherein said apparatus comprises a charger which can be connectable directly or indirectly to an internal power source of a personal computer detachably and selected from a group consisting of an international PCI (personal computer interface) standard selected from either one of a PCI board or PCI card, an IC chip mounted on an expansion board or the like, a CD-ROM, a floppy disk, an IC card and a personal computer hard disk (HD), each including therein a charging processing operation program which being for the purpose of causing a computer to execute a charging method recited in claim 89, a predetermined battery holder means, a connecting cable or a wire for connecting said holder means to said battery charger or for connecting said charger to an internal power supply source of a personal computer, and a predetermined operation manual of said charger, wherein said charger, said battery holder means, said connecting cable or a wire and said operation manual are collected into a kit so as to be sold publicly as a battery charging set.

94. (currently amended) A rechargeable battery ~~secondary-cell~~ charging apparatus according to claim 93, wherein said kit is individually formed based upon an application to which said rechargeable battery~~secondary-cell~~ battery to be charged being used, respectively.

95. (currently amended) A rechargeable battery ~~secondary cell~~ charging system which comprising the steps of;

creating a charging processing operation program used for each one of various kinds of rechargeable battery ~~secondary cell batteries~~ to be charged, respectively;

storing said charging processing operation program created for each one of various kinds of rechargeable battery ~~secondary cell batteries~~ to be charged, respectively, into a predetermined memory medium;

opening said charging processing operation program to the public through an communication net works or by printing out same on a hard storing medium;

providing said charging processing operation program suitable for an user's intention, when said user having a personal computer had accessed to this system;

asking said user to pay a predetermined necessary expenses through a predetermined payment system by a business entity providing said system to the public;

providing said charging processing operation program to said user by distributing system or through said communication net works, when said business entity

had confirmed that said user had said predetermined expenses through said predetermined payment system;

installing or down loading said charging processing operation program by said user into a personal computer owned by said user;

performing charging processing operation for a predetermined rechargeable battery ~~secondary cell~~ battery by said user utilizing said charging processing operation program; and

updating said charging processing operation program by said user with a new version of said charging processing

operation program which would arbitrarily be down-loaded by said user.

96. (new) A rechargeable battery charging apparatus according to claim 34, wherein a real time monitoring operation about an instant charging condition of said rechargeable battery to be charged, is performed with either one of said separate display of a battery voltage and battery temperature or said graph as shown on said display means.

97. (new) A charging system according to claim 55, wherein a real time monitoring operation about an instant charging condition of said rechargeable battery to be charged, is performed with either one of said separate display of a battery voltage and battery temperature or said graph as shown on said display means.

98. (new) A rechargeable battery charging method according to claim 77, wherein a real time monitoring operation about an instant charging condition of said rechargeable battery to be charged, is performed with either one of said separate display of a battery voltage and battery temperature or said graph as shown on said display means.

99. (new) A method for charging a rechargeable battery according to claim 86, wherein said method further comprising a step of performing a real time monitoring operation about an instant charging condition of said rechargeable battery to be charged, with said graph as shown on said display means.

100. (new) A method for charging a rechargeable battery in a charging system according to claim 87, wherein said method further comprising a step of performing a real time monitoring operation about an instant charging condition of said rechargeable battery to be charged, with said graph as shown on said display means.

101. (new) A method for charging a rechargeable battery in a charging system according to claim 88, wherein said method further comprising a step of performing a real

time monitoring operation about an instant charging condition of said rechargeable battery to be charged, with said graph as shown on said display means.